

Measurement Procedure:

This test procedure requires monitoring the trigger signal from the receiver. This is an output that occurs upon detection of the synchronization sequence of an input message. Separate outputs are required for the synchronization trigger resulting from an ADS-B Basic or Long Message synchronization sequences and Ground Uplink Message synchronization sequences.

Step 1: ADS-B Message Trigger Rate Verification

Disconnect all connections to the receiver antenna port of the ADS-B Receiving System. If diversity receiving is implemented, disconnect all inputs to both antenna ports. For an interval of 5 minutes, count the number of ADS-B Message Triggers. Verify that the rate is 50 per second or less.

Step 2: Ground Uplink Message Trigger Rate Verification

Disconnect all connections to the receiver antenna port of the ADS-B Receiving System. If diversity receiving is implemented, disconnect all inputs to both antenna ports. For an interval of 10 minutes, count the number of Ground Uplink Message Triggers. Verify that the rate is 2 per minute or less.

2.4.8.2.7 Verification of Trigger Processing Rate (§)Purpose/Introduction:Receiver trigger processing rate requirements are as follows:

- a. Equipment Classes A3, A2 and A1H receivers **shall** be capable of successfully processing at least 1000 trigger events per second.
- b. Equipment Classes A1L and A0 receivers **shall** be capable of successfully processing at least 900 trigger events per second.

Desired Message Signals:

Provide a method of supplying the UUT with two sources of desired Long ADS-B Messages. Each signal source generates messages according to a periodic schedule based on a 28 MSO period for Equipment Classes A3, A2 and A1H and a 24 MSO period for Equipment Classes A1L and A0. For each Equipment Class the period must be repeated exactly 101 times each second. The contents of the messages are as follows:

Message Contents for All Message Sources:

- Payload Type Code = 1
- Address Qualifier = 0
- ICAO Address = see below
- Payload is filled with pseudorandom data. The pseudorandom generator should have a long enough period so that no data is repeated during the course of this test.

**Note:** *It is acceptable to employ a limited set of “canned” messages based on pseudorandom number generator. The number of stored messages should be somewhat larger than the number of messages required for a second’s worth of testing. If the number of each type of stored message is prime with respect to the number of messages needed each second, the overlap between two sources will be randomized on a second-by second basis.*

- Valid FEC Parity is provided.

Transmission Schedule and Power Level for Each Message Source:

For Equipment Classes A3, A2 and A1H

**Table 2-24827a: Tx Schedule and Power Level for A3, A2 and A1H Message Sources**

<u>Message Source</u>	<u>Transmission Schedule (MSO within each 28 MSO period)</u>	<u>ICAO Address</u>	<u>Power Level (dBm)</u>
<u>1</u>	<u>0, 4, 8, 12, 16, 20, 24</u>	<u>0x000001</u>	<u>- 80</u>
<u>2</u>	<u>5, 13, 21</u>	<u>0x000002</u>	<u>- 65</u>

For Equipment Classes A1L and A0

**Table 2-24827b: Tx Schedule and Power Level for A1L and A0 Message Sources**

<u>Message Source</u>	<u>Transmission Schedule (MSO within each 28 MSO period)</u>	<u>ICAO Address</u>	<u>Power Level (dBm)</u>
<u>1</u>	<u>0, 4, 8, 12, 16, 20</u>	<u>0x000001</u>	<u>- 80</u>
<u>2</u>	<u>5, 13, 21</u>	<u>0x000002</u>	<u>- 65</u>

Measurement Procedure:

In each case the beginning of the first transmission period is MSO = 752. (This causes all the ADS-B Messages to fall within the ADS-B segment of each second.)

For Equipment Classes A3, A2 and A1H verify that the UUT reports reception of at least 400 messages with ICAO address 0x000001 and at least 300 messages with ICAO address 0x000002 per second.

For Equipment Classes A1L and A0 verify that the UUT reports reception of at least 300 messages with ICAO address 0x000001 and at least 300 messages with ICAO address 0x000002 per second.